

PATENT / DOCKET NO. 10287.39
Customer No.: 000027683

REMARKS

I. Status of the Application

Claims 1-34 are pending herein. Claims 1-6, 8-23, 25-27, 29-31 and 33 have been amended in accordance with 37 C.F.R. §1.121(c)(1). It is respectfully submitted that claims 1-6, 8-23, 25-27, 29-31 and 33, as amended, are supported by the specification and are otherwise in accordance with 35 U.S.C. §112. Favorable consideration and allowance of claims 1-34 in view of the foregoing amendments and the following remarks are respectfully requested.

II. Restriction and/or Election Requirement

The present Office action alleges that the inventions listed in the Office action as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because they allegedly lack the same or corresponding special technical features. The Office action also maintains that the claims are directed to more than one species of the generic invention. Specifically, the Office action alleges that the biopolymers enumerated in the claims and in the specification do not relate to a single general inventive concept under PCT Rule 13.1 because they allegedly lack the same or corresponding special technical features.

III. Election

Applicant hereby elects with traverse, for prosecution herein, the Group I claims, namely claims 1-11, which are drawn to labeled complexes.

Applicant also elects with traverse, the species of nucleic acids as the biopolymer specified in claim 4.

Applicants submits that claims 1-11 are readable on the elected Group and species.

Contrary to the position set forth in the Office action, Applicant respectfully submits that the above-captioned application does not lack unity of invention under 37 C.F.R. §1.475.

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Specifically, according to 37 C.F.R. §1.475(a), when a group of inventions is claimed, unity of invention is fulfilled when there is a technical relationship among the inventions that involves one or more of the same or corresponding special technical features. In this context, the term "special technical features" means those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

The present invention is directed to a labeled complex, a process for producing a labeled complex and a process for utilizing a labeled complex. Accordingly, all of the claimed subject matter involves the same special technical feature, namely the labeled complex. Consequently, all of the claims of Groups I-V have the same special technical feature and therefore should be regarded as being so linked as to form a single general inventive concept under PCT Rule 13.1.

In view of the foregoing remarks, it is respectfully submitted that the application contains groups of inventions which are so linked as to form a single general inventive concept under PCT Rule 13.1. Accordingly, it is requested that the unity of invention objection be withdrawn. If, however, the Examiner maintains as final the unity of invention objection, Applicant will take the position that the Examiner has admitted one species to be patentable over the other, and that any prior art must be closer to the elected species than the non-elected species to render the elected species unpatentable.

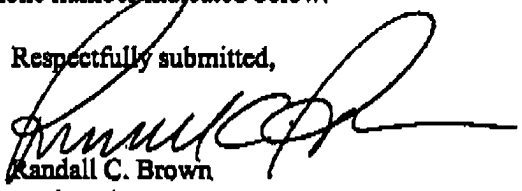
IV. Conclusion

It is believed that all matters set forth in the Office action have been addressed. Favorable consideration and an early indication of the allowability of the elected claims are respectfully requested. Should the Examiner deem that an interview with Applicant's

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undersigned attorney would expedite consideration of the elected claims, the Examiner is invited
to call the undersigned attorney at the telephone number indicated below.

Respectfully submitted,


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ATTACHMENT A

MARKED UP VERSION OF AMENDMENTS TO CLAIMS

CLAIMS:

1. (Amended) A labeled complex comprising, a carrier, a large number of target receptors bonded with said carrier, and labeled substances bonded with each target receptor, wherein said carrier and said labeled substances are bonded at different locations [from a location at which said carrier is bonded, wherein] on said target receptors and wherein each said target receptor [holds or can hold one or two or more types of targets, and in all] is adapted to hold at least one type of target, and predetermined types of [said] labeled substances [, predetermined types are contained] are present at predetermined molar ratios.
2. (Amended) A labeled complex according to claim 1, wherein all of said labeled substances are distributed to [almost] substantially all of said target receptors bonded with [one] a carrier, and [one] each said target receptor is bonded with one type of labeled substance.
3. (Amended) A labeled complex according to either one of claim 1 and claim 2, wherein each said target receptor, which is bonded with the carrier on a part thereof, and bonded with the labeled substance on the other part thereof, is formed in a slender shape [such as] selected from the group consisting of a line, a thread, a hair, or a stick. [and the like]
4. (Amended) A labeled complex according to any one of claim 1 through claim 3, wherein said target receptors comprise chemical compounds which contain biopolymers [such as] selected from the group consisting of nucleic acids, peptides, proteins, polysaccharides [,] and lipids [and the like], or living beings [such as] selected from the group consisting of viruses, bacteria [and the like] or a part thereof, or substances which [hold or] are [able] adapted to hold them.

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5. (Amended) A labeled complex according to any one of claim 1 through claim 4, wherein said target receptors comprise nucleic acids having a predetermined double strand base sequence comprising a first single strand and a second single strand, said labeled substance is bonded with [only a] said first single strand at one location, and said carrier is bonded with [the other] said second single strand [in] at another location.
6. (Amended) A labeled complex according to any one of claim 1 through claim 4, wherein said target receptor comprises nucleic [acid] acids having a predetermined double strand base sequence comprising a first single strand and a second single strand, said labeled substance is bonded [only with one] at a first location of [a] said first single strand, and said carrier is [fixed to another] bonded at a second location of [the] said first single strand.
8. (Amended) A labeled complex according to any one of claim 1 through claim 6, wherein said labeled substance is selected from the group consisting of a fluorescent substance, a mineral phosphate, [or] a luminescent substance [of] or a chemiluminescent substance. [and the like]
9. (Amended) A labeled complex according to claim 8, wherein the type of said luminescent substance can be discriminated by [any one of the] a method selected from the group consisting of excitation wavelength, emission wavelength, emission intensity, degree of emission polarization, emission phase or emission lifetime.
10. (Amended) A labeled complex according to claim 9, wherein said carrier is coated with one of a pair of chemical compounds that are specifically bonded, such as avidin, biotin [and the like], said target receptor is a DNA fragment having a predetermined base sequence, the other chemical compound of said chemical compound pair is bonded at [one] a first position, and said fluorescent substance is bonded at [an other] a second position.

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11. (Amended) A labeled complex according to any one of claim 1 through claim 9, wherein said carrier has objects of action at a distance such as magnetic particles [and the like], which can be controlled remotely.
12. (Amended) A process for producing a labeled complex according to any one of claim 1 through claim 11, said process [having:] comprising: a step for forming target receptors, which are bonded with labeled substances at one place, and are adapted to hold [or are capable of holding] specific targets, and a step for bonding the target receptors with the carrier.
13. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for bonding target receptors with said carriers is performed by mixing the carriers with which the target receptors are to be bonded, in a liquid wherein a large number of target receptors which are bonded with labeled substances are suspended [such that] wherein all of the labeled substances are of the types and molar ratios that are determined according to the types of the target receptors or the types and the quantity ratios of the target receptors.
14. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for generating the target receptors [has a step for] comprises synthesizing a first single strand nucleic acid that is bonded with a labeled substance, and that has a predetermined base sequence, and synthesizing [another] a second single strand nucleic acid that has a high relation with the base sequence, and that is processed to be capable of being bonded with the carriers, and generating a double strand nucleic acid by annealing [these.] the first single strand nucleic acid and the second single strand nucleic acid.
15. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for generating the target receptors [has a step wherein, by] comprises using a first primer for reproduction of a first single strand nucleic acid that is bonded with said labeled

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substances and that has a predetermined base sequence, and a second primer for reproduction of [the other] a second single strand nucleic acid to be bonded with said carrier, whereby a double strand nucleic acid is synthesized and amplified.

16. (Amended) A process for producing a labeled complex according to claim 12, wherein said step for bonding the target receptors with carriers, or the step for generating the target receptors, synthesizes and amplifies double strand nucleic acid by using a first primer for reproduction of a single strand nucleic acid with a predetermined base sequence, which combines with either one of said labeled substance and said carrier, and also provides a restriction enzyme process at the opposite end to the end that is bonded with said labeled substance or a carrier and, via an adapter composed of DNA ligase [and the like], bonds a carrier or a labeled substance onto the single strand side to combine the target receptor with the carrier, or generates a target reservoir.

17. (Amended) A process for producing a labeled complex according to claim 16, wherein said step for generating the target receptor [includes a step for] comprises removing a single strand that is not bonded with said labeled substance or said carrier by denaturation.

18. (Amended) A process for producing a labeled complex according to claim 16, wherein said step for bonding the target receptor with the carrier bonds said target receptor and said carrier by utilizing [bonding including] physical or chemical bonding [such as] selected from the group consisting of attachment, adsorption, adhesion through [the many] holes, gaps, or irregularities [that] in the carrier [has], or a specific interaction of biotin [,] and avidin [and the like], to suspend said target receptor and said carrier.

19. (Amended) A process for producing a labeled complex according to claim 16, wherein said step for generating the target receptor [is a step for] comprises generating a plurality of

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target receptors with which is bonded one of a pair of chemical compounds, one part of which is bonded with the labeled substance, and the other part of which is specifically bonded, and said step for bonding the target receptor with the carrier [is a step for] compriss bonding the target receptor with the carrier by suspending in liquid the carrier on which the other of said pair of chemical compounds is coated, and said target receptor with which the labeled substance is bonded.

20. (Amended) A process for utilizing a labeled complex [having;] comprising; a step for selecting a labeled complex [whose type is targeted from among the labeled complex group having] from a group consisting of a large number of a plurality of types of labeled complexes wherein the types or molar ratio of the targets of the labeled complex according to any one of claim 1 through claim 11, and the labeled substances assigned to the targets are different from each other, and a step wherein the selected labeled complex discriminates the labeled target.

21. (Amended) A process for utilizing a labeled complex according to claim 20, wherein said selection step has a liquid path and magnetic means which is capable of applying magnetization to inside of the liquid path, and is performed for the labeled complex, or the labeled complex and selective substances, using a pipette device for suction and discharge, and by operations [such as] selected from the group consisting of: quantification, isolation, apportioning, dispensing, clarity, suspension, agitation, concentration, dilution, mixing, contact, capture, holding, washing, denaturation, incubation, temperature control, extraction, recovery, transport, [and the like, or by a combination of these operations.] or combinations thereof.

22. (Twice Amended) A process for utilizing a labeled complex according to claim 20, wherein said selection step [has] comprises; a step for suspending said labeled complex group, a step for contacting the suspension in which the labeled complex group is suspended, and

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selective substances for selecting the object labeled complexes, and a step for extracting or separating the labeled complexes bonded with the selective substances.

23. (Amended) A process for utilizing a labeled complex according to claim 22, wherein said selection step [has] comprises a step for labeling said selective substances with different types of labeled substances from the labeled substances contained in the labeled complex, and for extracting and separating the labeled complex bonded with the selective substances based on the labeled substances.

25. (Amended) A process for utilizing a labeled complex according to either one of claim 20 and claim 21, wherein with said selection step, said target receptor is a double strand nucleic acid with a predetermined base sequence, and [in the case where] wherein said labeled substance and said carrier are bonded with [only one] a first single strand thereof, the [other] second single strand is removed by denaturation, and moreover for said selective substances, nucleic acid having a predetermined base sequence is used.

26. (Amended) A process for utilizing a labeled complex according to either one of claim 20 and claim 21, wherein said selection step [has] comprises a step for contacting stationary phases on which selective substances are fixed, and a liquid wherein the labeled complex group is suspended, and a step for selecting a labeled complex bonded with the selective substances on the stationary phase by removing the suspension by washing.

27. (Amended) A process for utilizing a labeled complex according to claim 26, wherein said selection step [has] comprises a step wherein labeled complexes are eluted physically or chemically from said stationary phases for extraction, and are selected by separation [,] or washing. [or the like]

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29. (Amended) A process for utilizing a labeled complex according to claim 26, wherein said selection substance is labeled with a labeled substance of one of a pair of chemical compounds that are specifically bonded, and said selection step [has] comprises a step [where] wherein a liquid [wherein] in which the conjugation of the selective substances and labeled complexes is suspended, is contacted with the stationary phase on which the other of said pair of chemical compounds is fixed, the conjugation is bonded with said stationary phase, the substances other than those bonded with the stationary phase are washed to be removed, said target receptor is denatured to be a single strand, and the labeled complex is eluted and selected by extraction, or separation.

30. (Amended) A process for utilizing a labeled complex according to either one of claim 20 and claim 21, wherein said selection step [has;] comprises a step for labeling said labeled complex by luminescent substances, for labeling the selective substances by different types of luminescent substances from the labeled substances, and for mixing and contacting the liquid in which the labeled complex group is suspended with the selective substances, and a step for passing suspended liquid of the labeled complex group including labeled complexes bonded with the selective substances through a translucent narrow tube, and said discrimination step [has] comprises a step for receiving light when the suspended liquid of said labeled complex group passes through said narrow tube, and a step wherein, with respect to the labeled complex selected by the measurement of the intensity of light emitted by the selective substance, based on the result of a measurement of the intensity of light emitted by the labeled complex, the types and the molar ratio are computed to discriminate the corresponding target.

31. (Twice Amended) A process for utilizing a labeled complex according to claim 21, wherein [in the case where] when said discrimination substances or selective substances are

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fluorescent substances or mineral phosphates, in the step for passing said suspended liquid through said narrow tube, an excitation light for exciting the substances is emitted toward said narrow tube.

33. (Twice Amended) A target analyzing apparatus which utilizes a labeled complex according to claim 32, wherein there is further provided irradiating means for externally radiating excitation light toward said narrow tube for, [in the case where] when said discrimination substances or selective substances are fluorescent substances or mineral phosphates, exciting the substances, or providing light for scattering to obtain scattered light from the substances.

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